CLAIMS

What is claimed is:

1. A method of assigning a network address to a host based on authentication for a physical connection between the host and an intermediate device, the method comprising the computer-implemented steps of:

receiving, at the intermediate device from a first server that provides authentication and authorization, in response to a request for authentication for the physical connection, first data indicating at least some of authentication and authorization information;

receiving, at the intermediate device from the host, a first message for discovering a logical network address for the host;

generating a second message based on the first message and the first data; and

sending the second message to a second server that provides the logical network address for the host.

2. A method as recited in Claim 1, wherein:

an authenticator process performs said step of receiving the first data;

a relay agent process for the second server performs said steps of receiving the first message and sending the second message;

the relay agent process is separate from the authenticator process; and

said step of generating the second message further comprises the step of sending a third message, from the authenticator process to the relay agent process, based on the first data.

3. A method as recited in Claim 1, wherein:

an authenticator process performs said step of receiving the first data;

a relay agent process for the second server performs said steps of receiving the first message and sending the second message;

the relay agent process is separate from the authenticator process; and said step of generating the second message further comprises the steps of:

storing second data based on the first data by the authenticator process; and

retrieving the second data by the relay agent process in response to said step of receiving the first message.

4. A method as recited in Claim 1, wherein the first server is an authentication, authorization and accounting server.

5. A method as recited in Claim 4, wherein the first server is a RADIUS protocol server.

6. A method as recited in Claim 1, wherein the physical connection comprises an Ethernet interface card on the intermediated device.

7. A method as recited in Claim 1, wherein the physical connection comprises a wireless Ethernet encryption key and time slot.

8. A method as recited in Claim 1, wherein the request for authentication is based on an Institute of Electrical and Electronics Engineers (IEEE) 802.1x standard.

9. A method as recited in Claim 1, wherein the second message is based on a dynamic host configuration protocol (DHCP).

10. A method as recited in Claim 1, wherein:

the first data includes user class data indicating a particular group of one or more authorized users of the host; and

said step of generating the second message is further based on the user class data.

11. A method as recited in Claim 1, wherein:

the first data includes credential data indicating authentication is performed by the first server; and said step of generating the second message is further based on the credential data.

12. A method of assigning a network address to a host based on authentication for a physical connection between the host and an intermediate device, the method comprising the computer-implemented steps of:

receiving, from the host, a first request for access to a network connected to the intermediate device, the first request including information about a user of the host;

sending a second request for authentication of the physical connection to a first server that provides authentication and authorization, the second request based on the first request;

receiving, at the intermediate device from the first server in response to the second request, first data indicating at least some of authentication and authorization information;

enabling the physical connection to forward subsequent messages between the host and a network connected to the intermediate device; and

storing the first data at least until a message is received from the host for discovering a logical network address for the host.

13. A method of assigning a network address to a host based on authentication for a physical connection between the host and an intermediate device, the method comprising the computer-implemented steps of:

receiving, at the intermediate device from the host, a message for discovering a logical network address for the host;

retrieving, from a persistent store at the intermediate device, first data indicating at least some of authentication and authorization information received from a first server that provides authentication and authorization in response to a request for authentication of the physical connection;

generating a second message based on the first message and the first data; and

sending the second message to a second server that provides the logical network address for the host.

14. A method of assigning a network address to a host based on authentication for a physical connection between the host and an intermediate device, the method comprising the computer-implemented steps of:

receiving, from the intermediate device, a first message for discovering a logical network address for the host, the first message including first data indicating at least some of authentication and authorization information from a first server that provides authentication and authorization in response to a request for authentication for the physical connection;

selecting a particular pool of one or more logical network addresses, from among a plurality of pools of one or more logical network addresses, based on the first data; and

sending to the host a second message including second data indicating a particular network address from the particular pool.

15. A method as recited in Claim 14, wherein each pool of the plurality of pools is associated with a corresponding group of a plurality of groups of one or more authorized users of the host.

16. A method as recited in Claim 15, wherein the first data includes user class data indicating a particular group of the plurality of groups.

17. A method as recited in Claim 14, wherein the particular pool is associated with a privilege to access an Internet through a gateway process.

18. A method of assigning a network address to a host based on authentication for a physical connection between the host and an intermediate device, the method comprising the computer-implemented steps of:

receiving, from the intermediate device, a first message for discovering a logical network address for the host, receiving first data from a first server that provides authentication and authorization in response to a request for authentication for the physical connection, the first data indicating at least some of authentication and authorization information;

selecting a particular pool of one or more logical network addresses, from among a plurality of pools of one or more logical network addresses, based on the first data; and

sending to the host a second message including second data indicating a particular network address from the particular pool.

19. A method as recited in Claim 18, further comprising the step of correlating the first message and the first data.

20. A method as recited in Claim 19, wherein:

the first message includes a unique identification for the host;

the first data includes the unique identification for the host; and

said step of correlating the first message and the first data is based on the unique identification for the host.

21. A method as recited in Claim 20, wherein the unique identification for the host is a media access control address.

22. A method of assigning a network address to a host based on authentication for a physical connection between the host and an intermediate device, the method comprising the computer-implemented steps of:

receiving, from the intermediate device at an authorization server on a network connected to the intermediate device, a request for authenticating the host, the request including information provided from the host;

determining whether the host is authentic and authorized to connect to the network based on user profile data in persistent store and the request;

sending, to the intermediate device, a response indicating whether the host is authentic and authorized; and

if it is determined that the host is authentic and authorized, then sending first data based on the user profile data to a configuration server that provides a logical network address for the host.

23. A method of assigning a network address to a host based on authentication for a physical connection between the host and an intermediate device, the method comprising the computer-implemented steps of:

receiving, from the intermediate device at an authorization server on a network connected to the intermediate device, a request for authenticating the host, the request including information provided from the host for a particular user of the host;

determining whether the particular user is authentic and authorized to connect to the network based on user-profile data in persistent store and the information provided from the host; and

if it is determined that the particular user is authentic and authorized, then sending, to the intermediate device, a response indicating the host is authentic and authorized,

wherein

the response includes data indicating a particular group of one or more users authorized for a particular set of network operations,

each network operation in the particular set is controlled by a logical network address of a host of a user, and

the group includes the particular user.

24. A computer-readable medium carrying one or more sequences of instructions for assigning a network address to a host based on authentication for a physical connection between the host and an intermediate device, which instructions, when executed by one or more processors, cause the one or more processors to carry out the steps of:

receiving, from the host, a first request for access to a network connected to the intermediate device, the first request including information about a user of the host;

sending a second request for authentication of the physical connection to a first server that provides authentication and authorization, the second request based on the first request;

receiving, at the intermediate device from the first server in response to the second request, first data indicating at least some of authentication and authorization information;

enabling the physical connection to forward subsequent messages between the host and the network; and

storing the first data at least until a message is received from the host for discovering a logical network address for the host.

25. A computer-readable medium carrying one or more sequences of instructions for assigning a network address to a host based on authentication for a physical connection between the host and an intermediate device, which instructions, when executed by one or more processors, cause the one or more processors to carry out the steps of:

receiving, at the intermediate device from the host, a message for discovering a logical network address for the host;

retrieving, from a persistent store at the intermediate device, first data indicating at least some of authentication and authorization information received from a first server that provides authentication and authorization in response to a request for authentication of the physical connection;

generating a second message based on the first message and the first data; and sending the second message to a second server that provides the logical network address for the host.

26. An apparatus for assigning a network address to a host based on authentication for a physical connection between the host and an intermediate device, comprising:

means for receiving, from a first server that provides authentication and authorization, in response to a request for authentication for the physical connection, first data indicating at least some of authentication and authorization information;

means for receiving, from the host, a first message for discovering a logical network address for the host;

means for generating a second message based on the first message and the first data; and

means for sending the second message to a second server that provides the logical network address for the host.

27. An apparatus for assigning a network address to a host based on authentication for a physical connection between the host and an intermediate device, comprising:

a network interface that is coupled to a data network for receiving one or more packet flows therefrom;

a physical connection that is coupled to the host;

a processor;

one or more stored sequences of instructions which, when executed by the processor, cause the processor to carry out the steps of:

receiving, through the network interface from a first server that provides authentication and authorization, in response to a request for authentication for the physical connection, first data indicating at least some of authentication and authorization information;

receiving, through the physical connection from the host, a first message for discovering a logical network address for the host;

generating a second message based on the first message and the first data; and sending through the network interface the second message to a second server that provides the logical network address for the host.